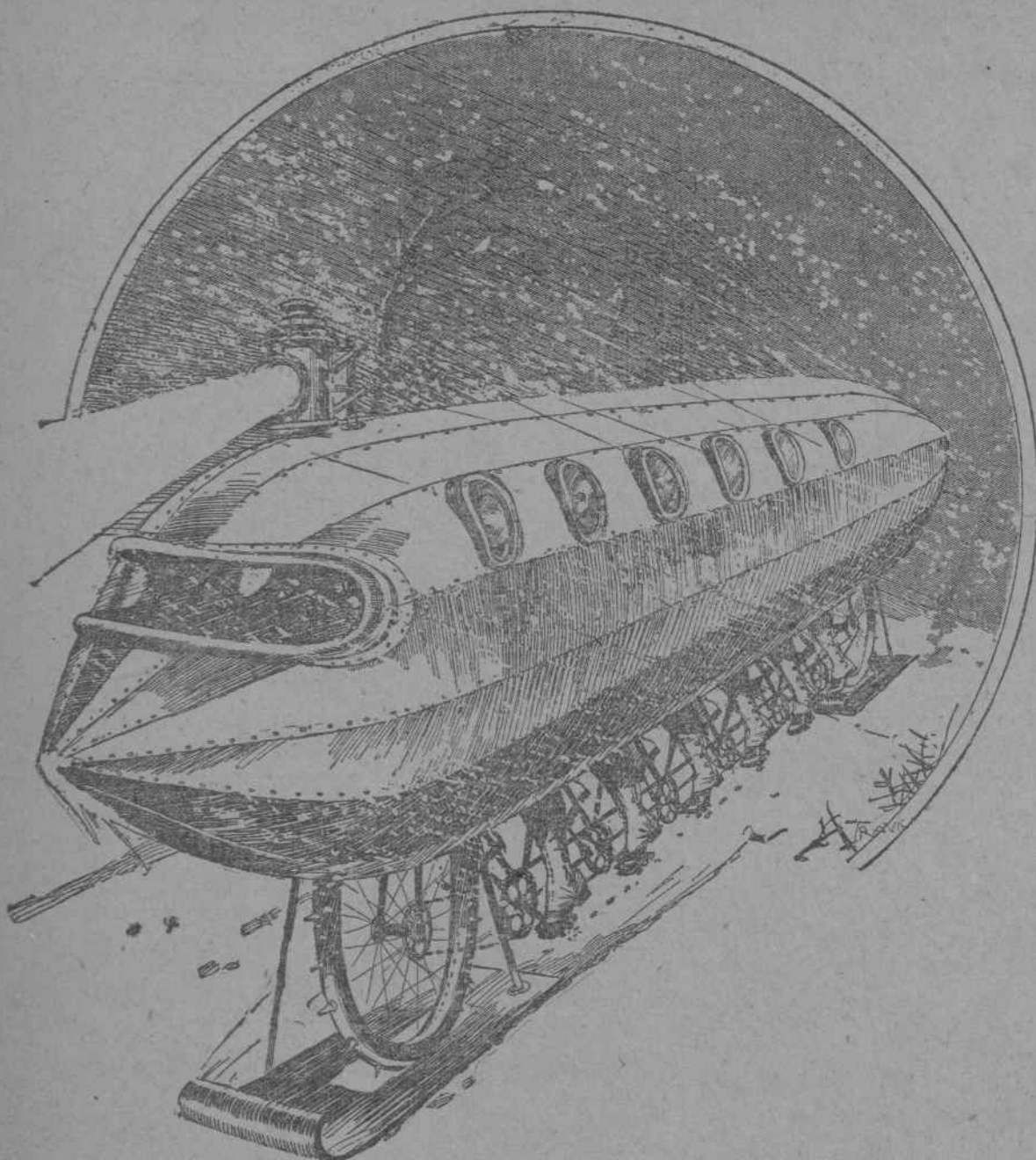


GERMANY'S SEXTET FOR MILITARY USE IN WINTER.

EMPEROR
WILLIAM'S
SNOW
BIKE.

A Hooded Sextet, with
Toboggan Runners, for
Carrying Dispatches
in the Winter.

The German army, long noted for its experiments with the bicycle, has just put in practice a brand new idea, which is likely to demonstrate the utility of the wheel in campaigns where snow and ice must be reckoned as among the enemy's forces. The accompanying illustration shows exactly the idea as it is now being experimented with along the banks of the Elbe and on the borders of the Black Sea.

Thus far only a sextet has been built with the full paraphernalia, because it is doubtful if a single wheel could be utilized in this fashion. The shield, which completely houses the upper portion of the bodies of the riders, is constructed of aluminum. In form it is slightly convex, but at the front runs to a point, not unlike that of an old-fashioned iron-clad. It has the same general shape in the rear.

Beneath the covering, or storm protector, the riders are seated on a machine which differs but little from that ordinarily seen in the form of a sextet bicycle. Saddle and equipment are practically the same, as are also the pedalling features. It is in the heavy, small iron wheels, noticed in the illustration, that the machine differs most from the ordinary sextet. These wheels might at first seem to be too deficient in size to answer the purpose for which they are intended, but practice and experiment have proved that they are exactly what is needed, owing to their peculiar construction, the secret of which rests in the brain of the inventor of the machine, Arnold von Winkelmann, of Berlin.

The forward wheel, with its spiked armor, meets the snow and ice through an opening in the broad runner, which looks very much like the toboggan of Canada. In this way an additional impetus is given the machine by means of the combination of both the revolving and the sliding powers. Thus it will be seen the speed which can be developed by the new invention will be great, and that as a means of rapid locomotion the storm protected bicycle promises to become one of the most notable of the many novel features which characterize the war lord's military cohorts.

It is a notable fact that the shrewdest military authorities of Europe are all of the opinion that the bicycle is destined to play a most important part in military operations. And it is admitted that Germany has set the pace in the experiments which have proved the actual utility of the wheel.

The chief utility of the machine will be in the carrying of dispatches. It is often the case in winter operations that the dispatch bearer and his horse, unsheltered in a pitiless storm, fall victims to the elements. Now if dispatches were carried on a sextet by six men instead of by one, the result would be far more sure, and would certainly be gained with infinitely greater celerity.

The horse has not yet been born which could keep up mile after mile, and hour after hour, over the frozen snow, the speed which the sextet could easily maintain, propelled by the twelve legs of six sturdy troopers. Again, the endurance of the men on a long, cold, snowy journey, if absolute-

GREATER NEW YORK'S ELECTRIC HANSOM CAB.

Horseless Hansoms and Cabs
For New York This Year.

ly protected from the wind and snow, would be assured.

Gliding over the snow with almost the speed of a locomotive, this vehicle will become a powerful instrument of war. Its riders will be protected not only from the wind and the cold, but even to a certain extent from missiles. If one of them should be disabled the other would still be able to work the instrument at a great speed and carry their dispatches to their destination.

The great snow cycle may be regarded as only one of the many wonderful forms of the motor, which are ready to put into service in Fifth Avenue and at the hotel stands very shortly.

The company expects the vehicles to speedily demonstrate their success, and will increase the number in service to several hundred, in the belief that the electrically propelled hansom and cab will largely supersede the horse-drawn vehicles now in service. Every section of the city is to be covered by the system, and regular stands are to be established at the Grand Central Station, the ferries, the hotels, and the theatres, and at several points in Brooklyn.

New York will be the first city in the world to place horseless vehicles in operation for public use, although London promises to be a close second. Arrangements have already been made for the operation of 350 electric vehicles in the British capital, but the system of propulsion is somewhat different from that which will be in use here. The vehicles which the New York company are having constructed are similar in general design to the hansom and coupes so long in use. They will weigh each about 2,500 pounds, complete, the electric storage batteries alone each weighing 800 pounds. Each vehicle will be operated by two levers, by one of which the operator will regulate the speed, and the other will be for steering purposes. They will be fitted with reversing gear, and to make the vehicle safe each will be supplied with foot brakes, enabling the operator to stop it instantly.

The coupes will carry the storage batteries under the seat of the operator, in front of the body of the vehicle, with the motor attached to the front axle. Both the hansom and coupes will be equipped with steel bicycle wheels, with pneumatic tires, to insure the least possible jar to the passenger and vehicle.

Enter the horseless vehicles in every day use in New York.

Automobile carriages—propelled by electricity—will in a few weeks be rolling through the streets of New York in public service. The Electric Carriage & Wagon Company, representing a combination of New York and Philadelphia capital, has perfected designs for motor hansom and coupes, to utilize the Morris-Salom motor vehicle electric storage battery system. Thirteen vehicles are now in course of construction at the works of Charles H. Caffery & Co., at Camden, N. J., and several

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The vehicles will have a maximum speed of from twenty to twenty-five miles an hour, depending on the street surface and grades. They will use three-horse-power motors. It will be impossible, of course, to drive them at such speed in New York, but they will be run much faster than ordinary horse vehicles. They will have a maximum mileage on one charge of battery of about twenty-five miles. The company has estimated that the cost of operating will be about one-half that of horses, and a consequent reduction of cab fares may be looked for.

The batteries are so arranged as to make charging a very simple operation, and they can be charged from any direct current electric power station. The company has secured a building in the heart of the city in which will be installed a power plant to charge the storage batteries of the vehicle. The Morris-Salom electric system of propulsion has been put through severe tests in experimenting with the new vehicles. Experiments have been conducted with several different designs in this city and in Philadelphia, and in recent races at Providence, Rhode Island, the remarkable record of five miles in eleven minutes and twenty-seven seconds was made, a relative speed of over twenty-six miles an hour.

The new vehicles which are being built at Camden, several of which are nearly completed, will be very handsome, and will be beautifully upholstered and finished. They will supply their own current of electricity for side lamps and lamps inside the bodies of the vehicles. The coupe and hansom bodies are to be painted dark blue. As soon as the vehicles prove their commercial success in this city, they will be introduced in Philadelphia, Chicago, Washington and Boston.

SAVED BY HIS HORSE.

Surprising Story of the Rescue of an Officer in the Matabele War by His Horse.

A good horse story is told by Surgeon-Captain Grey, who has been engaged in the Matabele war, in Rhodesia, South Africa.

A party of troopers was nearly cornered by an overwhelming force of Matabeles. Dr. Grey, to use his own words, "led toward the way out under a raking fire at a gallop, and was closely followed by the troop. Very soon, however, I fell from the saddle, struck with a bullet from an elephant gun about 500 yards off. The bullet struck me on the top of the thigh, smashing the socket of the thigh bone, breaking a vein, and otherwise wounding me. My horse was carried on at full speed with the rear guard, which rushed at desperate speed to clear the pocket-like entrance of the drift, where the natives were rallying in the hope of killing us."

"As I lay on the grass, bleeding profusely, I looked up and saw two natives aiming at me at a distance of about 40 feet. At the same moment I saw my horse come thundering back from the drift. It suddenly stopped and came and stood over my prostrate body, covering me from the firing and at the same time making a peculiar noise through its nostrils. I thought it had been wounded, and that with the pain, noise, and confusion it had gone mad. This notion, however, was soon dispelled, for it continued to stand over me in a kneeling posture, and I could see that the faithful animal had come back to protect me. I may remark here that this horse, which I myself selected, I made a pet of. The assegais from the approaching natives were now beginning to fly around me, and, thinking if I could reach my horse's back I should be shot, which was preferable to being assailed, I seized the reins, put my right foot in the stirrup, and made a supreme effort to mount. And I was successful, but how I did it I do not know, for my left side was entirely paralyzed. On finding myself in the saddle, I called, 'Go!' to my horse, which darted like an arrow toward the exit from the drift."

The New Way of Talking
Between Ships at Sea.

An ingenious new system of signalling between ships at sea has been proposed to the London Board of Trade by its inventor, Mr. Kelway. A description of it has been given to a Journal reporter by a member of the Marine Board of the United States.

"This system," said he, "consists of a large electric banner, which is placed upon the masthead of the ship. Upon it are nine circles of incandescent lights, each circle having forty-five figures. The figures in plain alphabet and numerals, so that they can be read."

"In the wheelhouse there is a keyboard communicating with the electric screen. An operator works it similar to a typewriter. At night an approaching ship would read the legend, 'Keep to port.' It could also read any of the sentences of the present code. In fact, it could read any words. But they would be spelled out so that there would be no danger of mistake."

"All questions could be asked and answered plainly. The operator would sit in the wheelhouse all night, giving out signals when necessary, and at other times carrying the regular lights."

"By day this same electric banner would be used. But then there would be red lights. These can be seen further than a flag, and the same screen would do for night and day."

"The expense attending this would not be great. Every 'tramp' steamer carries its dynamo, and the twenty-knotters have a large electric light plant. The screen could be easily operated."

"This practical objection to this system is that each nation has a different language. But this could be overcome by the adoption of English, which is the most generally known of any spoken tongue. No ship but has an English-speaking captain."

"A new system is seriously needed. In the last book of 'International Signal Codes' there is the sentence, 'No system yet devised will convey signals which can be perfectly and readily understood under all circumstances.'"

"The present signal system has been in use forty years, and is known as the 'International Code.' England, France, Germany, Russia, Brazil, Italy, Austria, Holland, Portugal, Belgium, Spain, Norway and Sweden have all adopted it. Yet the system is about as bad as any in its history of civilization. It is so defective that the United States Marine Board has never formally recognized it. True, the United States has been forced to act in conformity with other nations in this signal system, but it has never approved the system."

"The system is carried on by flags. They are of different colors. Each flag means a letter. There is a long pointed flag 'answer.' The others spell combinations. There are two flags. One is blue with a white middle. The other is a blue and white. These flags up mean 'under the vessel.' The ship sailing will raise its flag in answer. 'May be a blue one with a white middle and the other a yellow one. These mean 'remain by the side of the vessel.'"

"There are nineteen of these flags, all words. Taken together they form sentences. Every mariner has a book of marine intelligence by which he can read these flags."

"At present the only sentences that can be expressed are: 'Want immediate assistance.' 'Do not attempt to land in your boats.' 'We are coming to your assistance.' 'Damaged; rudder cannot steer.' 'You are standing into danger.' 'Engine or machinery disabled.' 'Heavy weather coming; look sharp.' 'Bar impassable.' 'Cast off.' 'Make fast.' 'Slack away.' 'The berth you are now in is not safe.' 'Hold on until high water.' 'Remain by the ship.' 'Quit the vessel as soon as possible.' 'Do not quit the ship until the tide has ebbed.' 'Landing is impossible.' 'Look out for a line.' 'Endeavor to send a line.' 'Do the

best you can for yourselves; no assistance can be given.' 'Lookout will be kept on the beach all night.' 'Lights or fires will be kept for the best place for coming on shore.' 'Keep a light burning.' 'I must abandon the vessel.' 'I am on fire.' 'I am sinking.' 'Want assistance; mutiny.' 'Want immediate medical assistance.' 'Want boat immediately.' 'Want steam tug.' 'Want pilot; can one be obtained?' (Answer yes or no.) 'Repeat your signal or place it in a more conspicuous position; it is not understood.' 'Signal not understood, although the flags are distinguished.' 'I cannot make out the flags.'"

"These signals, while good as far as they go," said the Marine Board member, "are open to objection. Every year we make out a protest against them. The first trouble with the working of these flags comes with the reading of them. Every mariner knows his code. But in the great excitement of danger at sea there are always mistakes. The pilot or the captain of one of the other boats becomes 'rattled.' The other ship reads them contrary to their meaning, and there is no accurate reply. It read aright they take fifteen minutes to execute. Meanwhile the ships are coming toward each other at the rate of twenty knots an hour and withdrawing just as fast; and the captain comes into port telling of a ship at sea that raised peculiar signals that could not be understood or were too slowly raised, and there was no time to delay for a good reading."

"The next objection is a still more practical one. In a stiff wind flags fly to leeward, generally to the aft of the ship, and cannot be read. A boy running with a flag of him. The same with a rapid ship. The flags fly so straight back-ward that the other vessel cannot make them out, and often cannot discern flags at all."

"At night there are now colored lights that, while good, are very inaccurate. There are about twenty-five of these lights that burn combinations of color. One burns red for a minute, then green, then red again. This means 'I have sprung a leak.'"

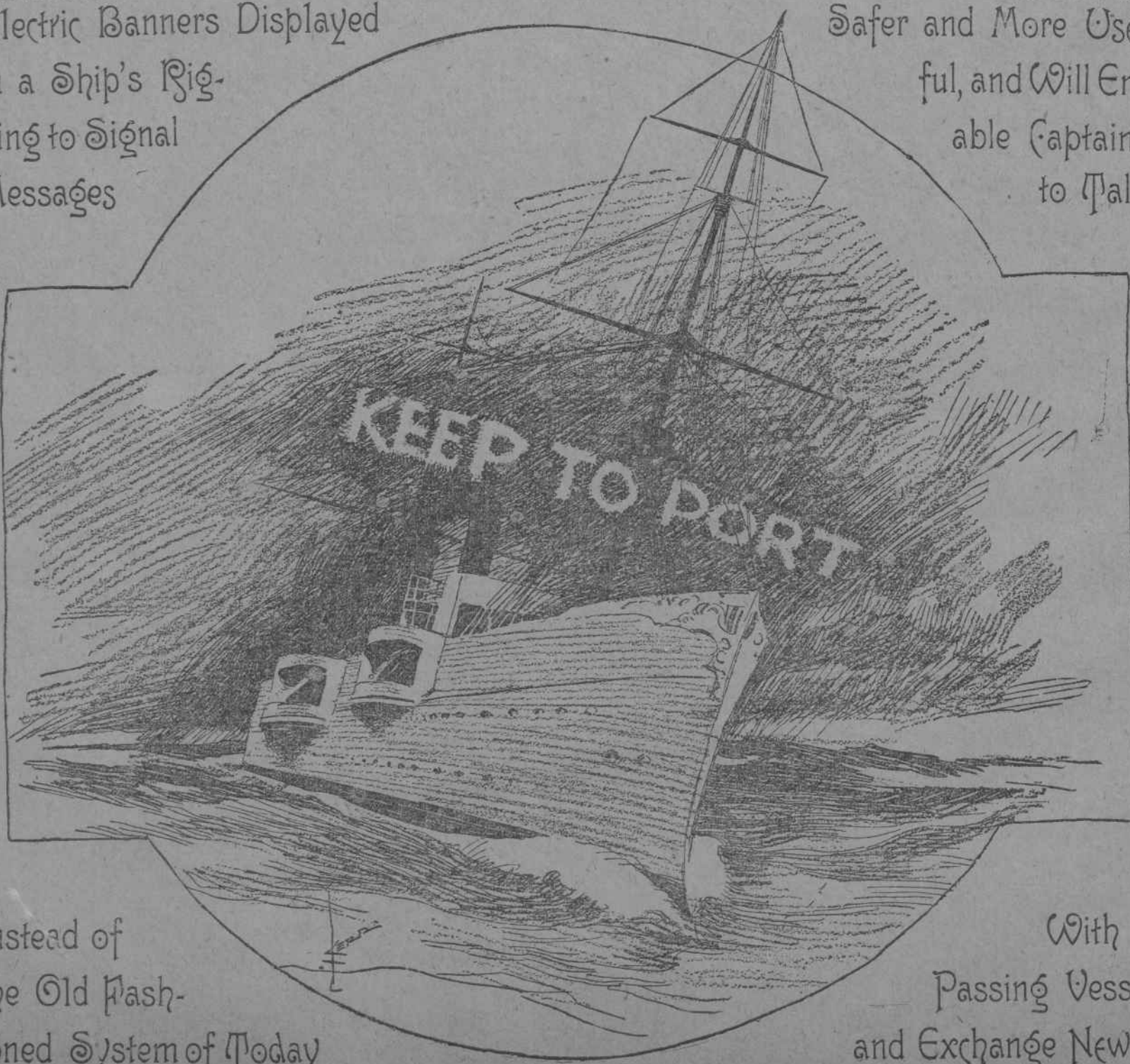
"Other lights stand for 'I want assistance.' 'Want water.' 'Have contagious disease.' 'Shall we keep company?' 'Want to communicate closer.' 'I am aground.' 'Want to be taken in tow.' 'Want food.'"

"And so through a very ordinary list of wants. These are all expressed at night by these colored lights. But in a fog or storm you may see the lights and you may not. The lights may burn and they may not. Or they may splutter and produce a confusing mess of color, all the while wasting the few precious minutes that the ships are within signalling distance."

"In case of war with Spain we would need an immediate signal system. At present the questions asked at sea are: 'Is Maceo dead?' 'Has Congress acknowledged Cuba?' 'Has Spain started out her squadron for the United States?' 'Is the Spanish Minister still in America?' 'Is it safe to sail around Cuba?'"

"Ships should be able to answer 'Yes' or 'No' immediately. They should have a signal that would give reply to all questions that might be asked. They should not be obliged to resort to awkward expedient."

"At present the only way of answering these questions is to put out a small boat. The other ship does the same. The two small boats get within speaking distance and exchange news. This way is only possible where there is plenty of time and the news is imperative. Otherwise the ships must wait until making port."

Electric Banners Displayed
in a Ship's Rig-
ging to Signal
Messages

Instead of
the Old Fashion-
ed System of Today

Safer and More Use-
ful, and Will En-
able Captains
to Talk

With a
Passing Vessel
and Exchange News.